Africa RISING in the Ethiopian Highlands

Cultivated forages for improved livestock productivity in the highlands of Ethiopia

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Introduction

Feed shortage and low quality of available feeds are major constraints to improve livestock productivity. Yet, the practice of fodder cultivation by smallholders has remained limited.

Objective

- To capacitate smallholders to evaluate and adopt improved fodder cultivation and utilization for better livestock nutrition and livelihood

Approach

- Farmer research groups (FRGs) and forage niches identification
- On-farm action research: oat-vetch mixture, desho grass, faba bean oat intercropping, and sweet lupine trials
- Productivity, nutritional quality and animal responses measurements
- More than 360 participant farmers across the AR sites.

Achievements

- Substantial amount of high quality forage biomass produced from a small plot of land (eg. Figure 1)
- Supplementation of oat-vetch mixture to milking cows and fattening animals resulted in considerable improvement in productivity (Table 1)
- Integrating forages (desho) on soil bunds created synergy in improving both soil conservation and feed resources (Photo)
- Intercropping faba bean with forages increased feed biomass with slight decrease in grain yield but increased total plot benefit (Figure 2)
- Sweet lupine varieties (Sanabor and Vitabor) performed well with a grain yield of 1.6 ton/ha, and harvest index of 2.6
- The interventions created strong interest among farmers and local development actors for wider scaling
- 6 MSc students attached and training provided to local partners

Future plans

- Coordinate efforts and resources to further scale feed innovations
- Fill in knowledge gaps on utilization of forage resources
- Document successes and challenges, and identify research questions and solutions

Core partners

ILRI INTERNATIONAL LIVESTOCK RESEARCH INSTITUTE

CIAT International Center for Tropical Agriculture Since 1967 / Science to cultivate change

ICRISAT Science with a human face

ICARDA Science for Better Livelihoods in Dry Areas

CIMMYT

IWMI International Water Management Institute

World Agroforestry Centre

IFPRI

EIAR

CENTRO INTERNACIONAL DE LA PAPA CIP

We thank farmers and local partners in Africa RISING sites for their support

Figure 1. Oat-vetch mixture at farm level and Desho grass in watersheds

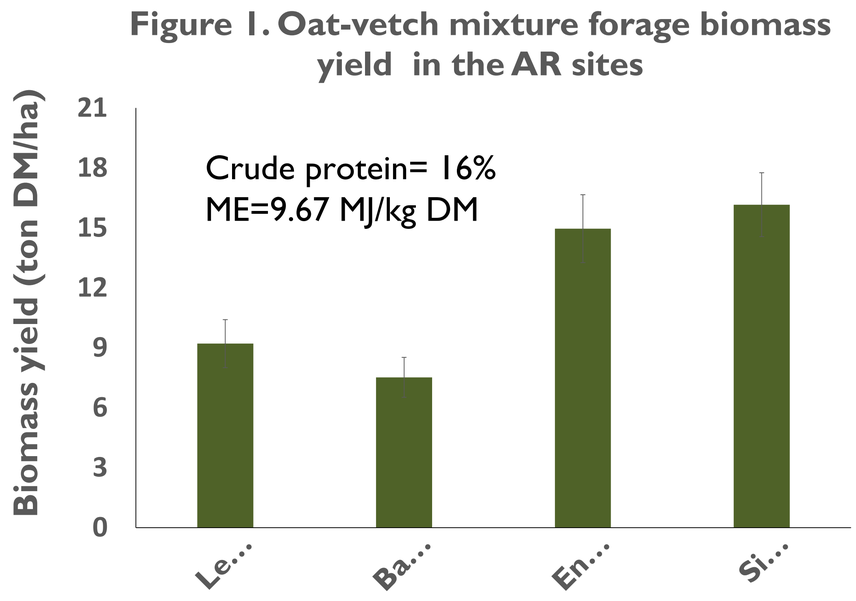
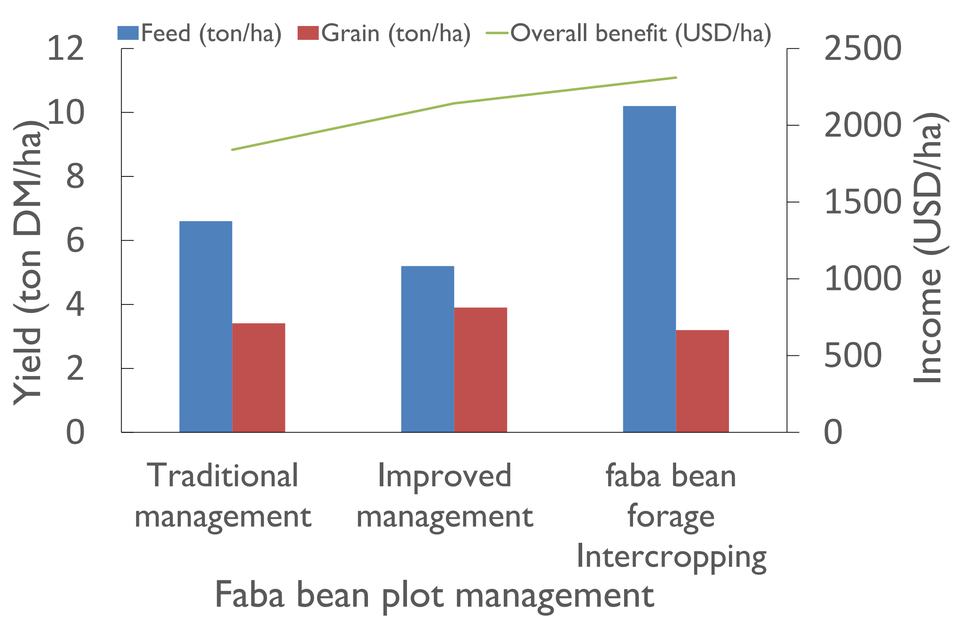


Table 1. Effect of supplementing 1.5 kg oat-vetch hay daily on milk yield of lactating cows

Breed type	Milk yield (Lt/day/cow)	
	Before	After
Cross-bred	3.0±1.0	5.33±1.04
Local cow	1.75±0.5	2.75±0.65

Figure 2. Effects of different faba bean management practices on plot productivity and income of farmers



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